WEST Search History

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DATE: Sunday, September 26, 2004

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☐	L28	l2 and l22	0
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☐	L26	l22 same l24	2265
☐	L25	l24 same l22	2265
☐	L24	deposit$5	1087600
☐	L23	l21 and l22	165
☐	L22	mix$5 same irradiat$5	42623
☐	L21	(organic adj light)or oled$	8678
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☐	L16	4769292.pn.	1
☐	L15	4769292.pn.	1
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☐	L4	6392339.pn.	1
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L14: Entry 1 of 1 File: PGPB Jan 16, 2003

DOCUMENT-IDENTIFIER: US 20030010288 A1
TITLE: Film formation apparatus and film formation method

Pre-Grant Publication (PGPub) Document Number:
20030010288

Summary of Invention Paragraph:
[0020] First, the substrate having the anode is loaded to a loading chamber. The substrate is transferred to an ultraviolet ray irradiation chamber via a first transferring chamber and ultraviolet irradiation is performed in a vacuum atmosphere to clean the surface of the anode. Note that, when the anode is an oxide such as ITO, oxidation processing is performed in a pretreatment chamber.

Summary of Invention Paragraph:
[0080] Therefore, light sources 211 for irradiating light are provided in the film formation chamber 210 to irradiate the organic compound molecules with light. The organic compounds to which the energy is applied by light irradiation are activated. Note that infrared light, ultraviolet light, or visible light is irradiated from the light sources 211. In view of preventing damage to the organic compound molecules, infrared light is preferable.

Summary of Invention Paragraph:
[0081] The residence time of the organic compound molecules on the surface of the substrate is extended by light irradiation and the organic compound molecules can be easily formed into a film in an optimum position on the substrate. Thus, a denser film can be formed.

Summary of Invention Paragraph:
[0082] FIG. 3A shows a structure of the organic compound film formed by ordinary film formation process and FIG. 3B shows a structure of the organic compound film in the case where the organic compound film is irradiated with light in the molecular activation region 213.

Summary of Invention Paragraph:
[0083] With respect to the respective structures, an anode is formed on a substrate, a first functional region 221, a first mixed region 222, and a second functional region 223 are formed thereon, and finally a cathode is formed thereon. Thus, light emitting elements with such structures are obtained. According to the element shown in FIG. 3B, a distance between the organic compound molecules becomes short and thus a denser film is formed, as compared with the element shown in FIG. 3A. Note that, when gaps are produced between the organic compound molecules in the inner portion of the organic compound film as shown in FIG. 3A, they become defects and movement of carriers is hindered in the defect portions. Thus, the reduction in luminance and the deterioration in an element are caused by the storage of charges. Therefore, it is effective to provide the light sources in the film formation chamber and light irradiation is performed at film formation.

Detail Description Paragraph:

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     FILE 'INSPEC' ENTERED AT 11:14:56 ON 26 SEP 2004
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L2        116579 IRRADIAT######
L3        579250 4
L4        116579 IRRADIAT######
L5           518 L1 (P)L4
L6             0 CAHMBER
L7         44649 CHAMBER
L8            10 L5(P)L7
L9            15 DHIS
L10           90 FIRST (A) ORGAN####
L11           46 SECOND(A) ORGAN#####
L12            0 L5 AND L10 AND L11
L13            0 L10 AND L11 AND L4

     FILE 'CA' ENTERED AT 11:27:44 ON 26 SEP 2004
L14         2227 DEPOSITION(A)CHAMBER
L15            0 L5 AND L14
L16           45 L2 AND L14

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     FILE 'CA' ENTERED AT 11:44:17 ON 26 SEP 2004
L18           32 L1 AND L2

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☐	L9	L8 or l7	8678
☐	L8	organic adj light	7700
☐	L7	oled$	4323
☐	L6	L5 same irradiat$4	5
☐	L5	L4 same l3	230
☐	L4	deposit$5	1087600
☐	L3	l1 same l2	1887
☐	L2	second adj organ$3	4123
☐	L1	first adj organ$2	3973

END OF SEARCH HISTORY